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ABSTRACT

Designed as a manual for human and social service agencies and programs engaged in curriculum and career development, this technical paper describes the Social Service Aide Project (SSAP) Functional Task Analysis Data System resulting from Phase I research and Phase II analysis and refinement. Sections discuss and diagram these system components: (1) Preliminary Analysis and Development which is influenced by the purpose, external constraints to environment, resources, subsystems, and the maintenance and evaluation of the system, (2) Job Analysis Data System, which structures the planning, functioning, and production of career advancement programs based on employment and educational objectives, and (3) Analysis of the employment and educational objectives and task regrouping in the career ladders and core curriculum. Other sections are devoted to problems encountered by SSAP while using and developing the system, and implications of the system. Supplementary samples and technical information are appended. Phase I is available as ED 035 062 (RIE, May 1970), and related documents are available as VT 012 530-012 533 and VT 012 535 in this issue. (SB)

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Phase II Final Report

Theory and Methodology of Human Services Functional Task Analysis Data System

A Technical Paper
prepared by George Kich

Project No. 7-0329
Grant No. OEG-0-8-070329-3694 (085)
SOCIAL SERVICE AIDE PROJECT
For the Training and Education
of Paraprofessionals

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INTRODUCTION

The "Theory and Methodology of Human Services Functional Task Analysis Data System" is a technical paper written by George A. Kich, Program Assistant, in conjuntion with the Social Service Aide Project Staff, and is the result of both Phase I research, and Phase II analysis and refinement. Designed as a manual for the use by human and social service agencies and programs engaged in curriculum and career development, this technical paper describes the SSAP Phase I Functional Task Analysis Data System. Within the complete scope of curriculum and career development that is SSAP's primary concern, Functional Task Analysis plays a major role. (see Chart A). It helps to collect, analyse, and sort data in a way meaningful and vital to project concerns. Task Analysis joins the objectives of human services, education, and employment in order to determine a new structure of careers and curriculum to help implement equitable standards for all workers. The Final Report of Phase II, September, 1970 will further delineate the other aspects of Chart A.

The following paper is presented in the normal sequence of systems analysis determination, following closely the steps outlined in Chart B. The Flow Chart will serve to place individual steps within the context of the entire system. Sections I, II, and III of this paper will explain the rationale behind the systems approach and will use examples where appropriate to show what SSAP accomplished in its task analysis research. Section IV will discuss some of the more important problems SSAP encountered while using and further developing the system. Section IV will also assess SSAP's use of the approach. Section V deals with the implications of the systems approach. A Bibliography has been included to credit resource material, other examples of task analysis, and some general reference material. The Appendix serves to supplement the text with samples and more specific technical information.

CHART A : TASK ANALYSIS IN CONTEXT

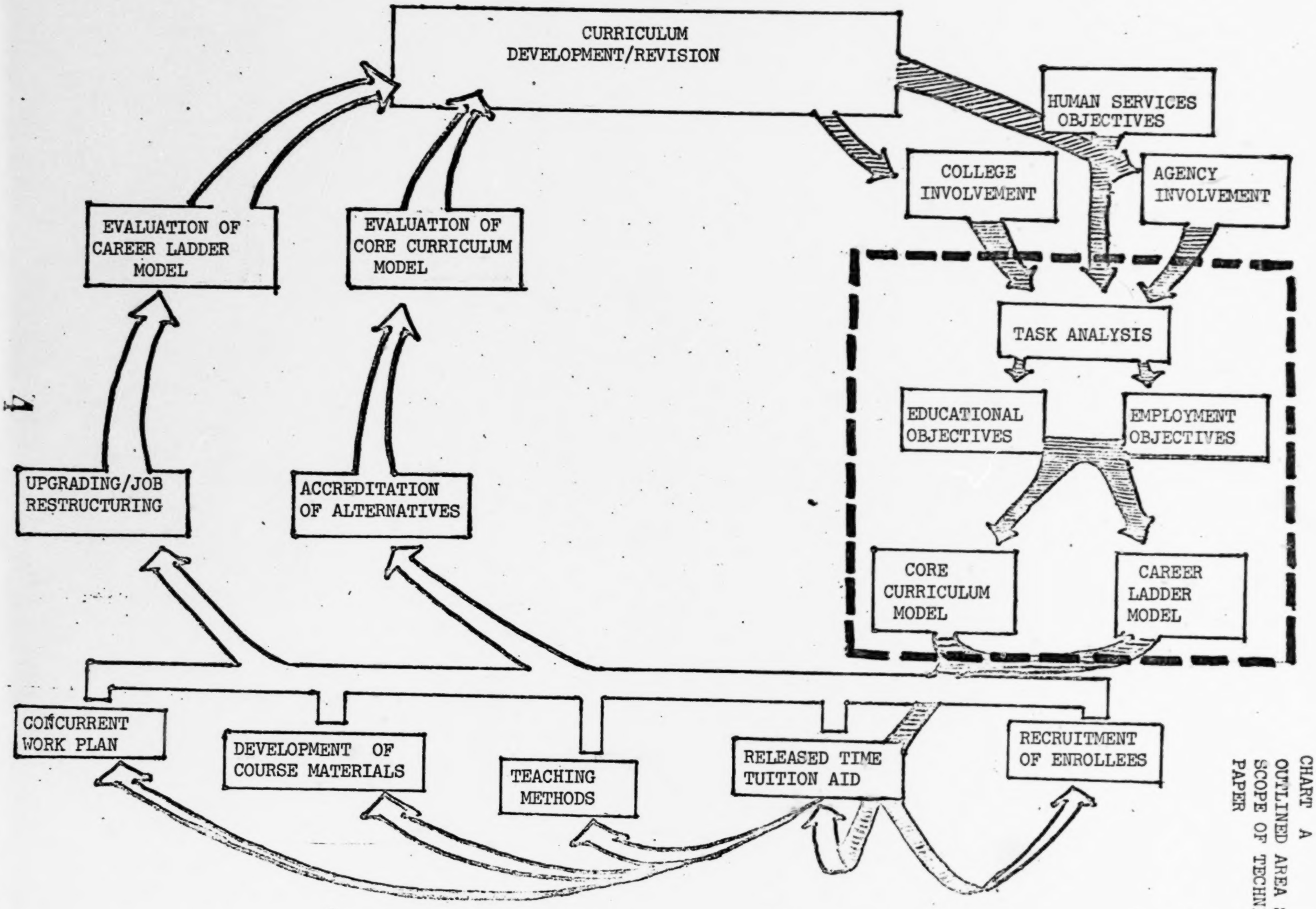
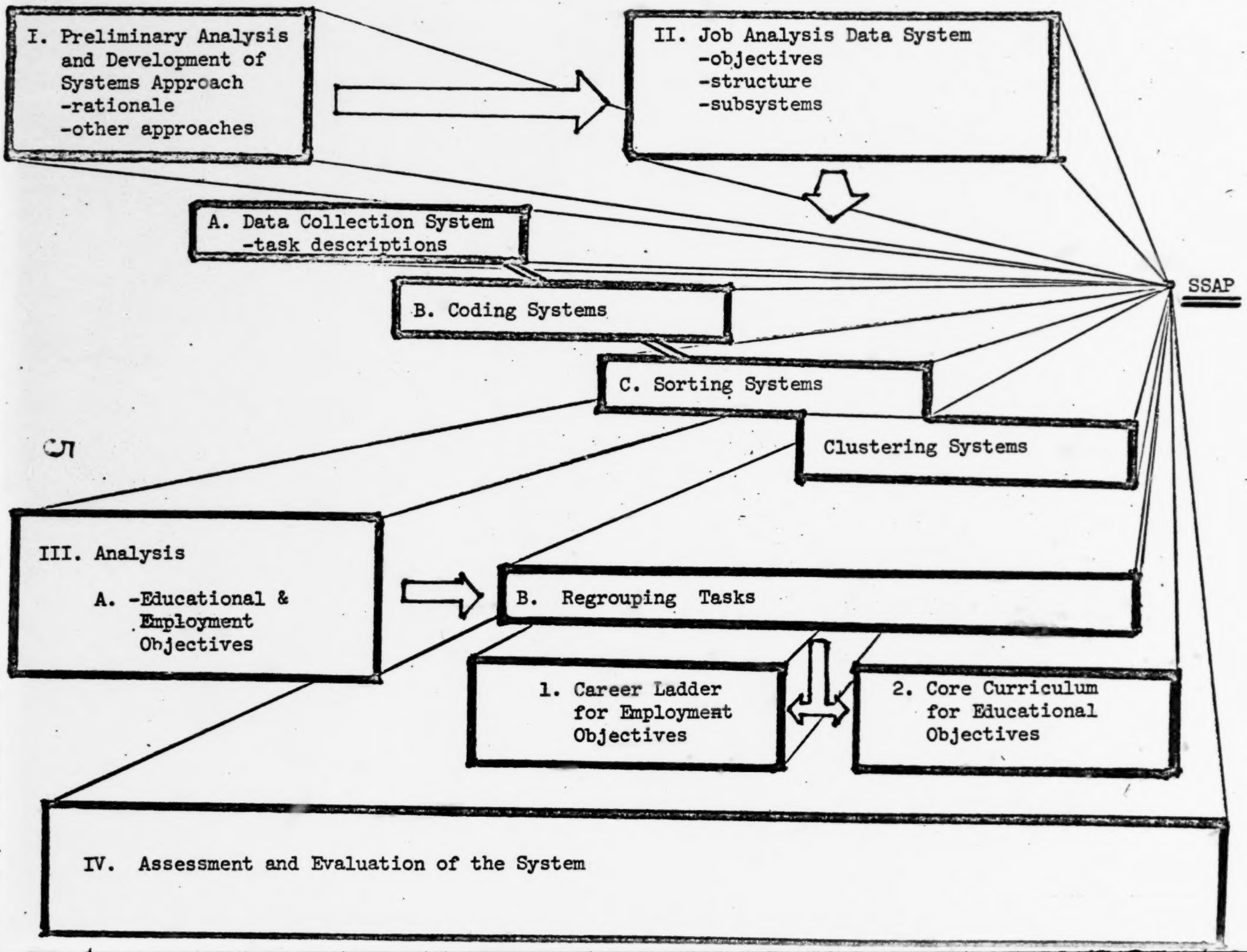


CHART A OUTLINED AREA SHOWS SCOPE OF TECHNICAL PAPER

CHART B: FLOW CHART OF FUNCTIONAL TASK ANALYSIS DEVELOPMENT



I. PRELIMINARY ANALYSIS AND DEVELOPMENT OF SYSTEMS APPROACH

The systems approach to career advancement produces an effective method for manpower development. With only minor variation, the approach can be geared to attain almost any purpose demanding an analytical scheme. Derived from systems analysis, the approach is an organizational framework utilizing the basic rudiments of research, problem-solving, and control.

> "A systems approach focuses on the achievement of a specific purpose or goal simultaneously seeking (a) to organize the technology, manpower, and money within a specified time frame and (b) to respond to changes in the environment of the goal, including needs and values that are important in its achievement. In short, the systems approach originates in needs and values, focuses on a goal, responds to its environment, and presumes to measure progress towards the goal."[1]

The following variables therefore determine the specific character of the systems approach to be utilized: the purpose; the external constraints or environment; the resources; the components or subsystems; and the maintenance and evaluation of the system.

A. Purpose, Goals, and Objectives

The primary purpose dominates the entire system, from beginning stages to evaluation and completion. It is a statement of final attainment and thus becomes the foundation for planning the necessary activity to achieve the purpose. The systems purpose concentrates all activities toward the achievement of specific tasks by deciding about priorities originating from the values and needs of the people developing the system and of those benefiting from the system's products.

Goals are determined after the system purpose has designated the end result or the desired condition and are the sequential and developmental steps toward fulfilling the purpose. They label more precisely the areas of attainment necessary within long-range time frames, a recognition of environment, expediency, efficiency and desire.

Objectives are even more specific definitions of activity that are logical extensions of each goal and which are guided by the overall purpose. Within specific short-range time frames, within rocognized limits of energy, space, and resources, and within the specifications of the systems purpose, the objectives are the steps toward achieving the goals.

The statements of purpose, goals and objectives indicate the various stages of systems development and achievement. They necessitate adherence to schedules. Subsystems can be identified as a result of specifying purpose, goals and objectives, as well as determining the

whole system within the frame of larger systems. Finally, the systems purpose helps to determine the criteria for continual readjustments and refinement, and the evaluation of the degree of success.

The importance of clear and concise statements of systems purpose, goals, and objectives cannot be overestimated. Because these statements are the bases for all aspects of systems operation, they should not be obscure, should consist of coherent steps and procession from purpose to objectives, and should be the objects of constant referral and scrutiny within all of system operations.

B. External Constraints or Environment

> "Systems are accomplished in environments, i.e., in a world of other ongoing competing systems... Human service systems must deal with such realities in the environment as geographic areas, time periods, budgets, size of populations, and available manpower. In effect, when you explore the environment in which you propose to pursue a purpose, you are determining the boundary conditions - the constraints - the limitations in relation to which your system must be implemented...."
>
> "Positively stated as objectives, the constraints become the criteria against which to measure progress in achieving the purpose."[2]

Within these constraints arises the confrontation between projected ideal and reality, between original purpose and final fulfillment. System objectives are derived from this opposition and are fruitful in that they specify the immediate result to be accomplished by defining "(1) a period of time (2) budget, (3) manpower supply, (4) place, and (5) client population."[3]

Within the scope of system purpose, the objectives define measureable short-range outcomes that have their own criteria for achievement and evaluation.

C. Resources

The systems purpose is derived from values and needs and becomes focused in its scope when placed in the context of a specific environment. The actual methods for achieving the purpose become other factors in developing a systems approach. Implementing the system necessitates a knowledge of the technical options available, the means for efficient operation and the possibility of changes in intermediate objectives. If the overall purpose must be changed, then it was not broad enough. Intermediate goals and objectives should indicate the specific means of attaining the system purpose and should be flexible enough to operate within the constraints of environment and resources. Thus, decisions should be made in terms of costs and short and long-term effects as represented in the objectives.

D. Components or Subsystems

> "Most systems are really subsystems. Therefore, in carrying out a system purpose, we usually need to consider the purpose of each component of the system. This is necessary to organize activity in an effective manner; that is to make sure that there is effective meshing of component elements of the system on one hand and that there is a minimization of random activity on the other. In order to achieve a purpose, usually a whole series of events must be coordinated.... Many different activities must be carried on simultaneously, and the output of these activities must mesh precisely in order for the objectives of the system to be realized." [4]

Human services manpower development contains many kinds of activities dispersed over as many kinds of agencies, institutes and offices. In order to achieve a purpose within the confines of available resources and opportunities, the subsystems, the various steps, instruments, components, and dependencies, must be analysed and synchronized with the whole system.

E. Maintenance and Evaluation of the System

Maintenance concerns itself with controlling the progress and growth of the system as it functions. Evaluation, as discussed under "Purposes" is a built-in testing device, to measure the success or failure of the system in attaining its purpose. If the proper maintenance is applied throughout the functioning of the system, the success of the approach is usually assured. Feedback, redundancy, and system correction are only three of the many aspects important in maintenance.

> "Feedback is concerned with designing the system so that at critical points in the system, for example, where the output of one subsystem is the input of another - there are controls which quickly tell you that the system is doing what it is supposed to do.... Redundancy provides back-up at critical points so that the system can keep going. It is especially important in a highly institutionalized society such as ours that redundancy of manpower for direct human services be a considered, integral part of the system and regarded as an essential cost.... System correction is also essential to provide periodic review of performance in order that the system can be revised and brough up to date.... By their nature, all systems, in both hardware and human services, start to obsolece the moment they are born." [5]

A system should not be evaluated a failure because it may have undergone drastic changes due to careful maintenance. If the purpose is achieved within all the attainable resources and subsystems, then the total system can be deemed a success, no matter how many changes of form the system might undergo.

Footnotes:

1. Sidney A. Fine, "A Systems Approach to Manpower Development in the Human Services" in Methods for Manpower Analysis, #3, Upjohn Institute for Employment Research (Michigan, 1969), page 27.

2. Ibid., pp. 31-32

3. Sidney A. Fine, A System's Approach To Task Analysis and Job Design: Seminar Workshop Workbook, W.E. Upjohn Institute for Employment Research, P. 9

4. Fine, "A Systems Approach to Manpower Development in the Human Services," op. cit., p.33.

5. Ibid., pp. 33-34

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*See Section VI, Bibliography, for further information and sources concerning systems analysis, of which Sidney Fine's is only one of many different approaches.

PURPOSE

↓

GOALS

A	B	C	D	Constraints and Resources
				TIME
				BUDGET
				MANPOWER SUPPLY — LOGISTICS
				PLACE - SCOPE
				CLIENT POPULATION
OBJECTIVES				
a. b. c. d.	a. b. c. d.	a. b. c. d.	a. b. c. d.	

Constraints and resources do not remain constant, nor do they only affect the goals. As they change and fluctuate, the achievement of goals and objectives could be altered.

Continous referral to the systems purpose and maintenance of specific activities can keep the goals and objectives meaningful in the face of exterior change.

JOB ANALYSIS

PROVIDES INFORMATION

about

Jobs

Job Analysis is not Time and Motion Study.

Job Analysis is not merely filling out forms.

IDENTIFICATION

Titles by which the job is known.

Where the job fits in the "world of work"

The relationship to other jobs.
Promotions Transfers

DUTIES

Clear, Accurate, Concise
Description of all tasks performed by the worker.

Shows
-Worker Functions
-Work Fields
-Materials, Products, Subject Matter, and Services.
--Machines, Tools, Equipment, Work Aids, Data, People involved.

Answers the Questions
...What?
How?
Why?

Tells
Worker actions
What work gets done
What is purpose of job.
What knowledges of work methods, materials, products, machines, tools, work aids, subject matter are used by worker.

REQUIREMENTS

Interests
Positive preferences for some types of work and dislikes for contrary types of work.

Involvements with
Data, People, Things; levels and significance.

Temperments
Those personality qualities which remain fairly constant and reveal a person's "intrinsic nature".

Physical Capacities
Necessary in the worker to perform the job.

Aptitude Levels
Intelligence
Verbal
Numerical
Spatial
Form
Clerical
Motor Coordination
Finger Dexterity
Manual Dexterity
Eye-Hand-Foot Coord.
Color Discrimination

Environmental Conditions
In which the worker performs the job.

Is used in some form in most personnel management functions.

Training
General Education
Specific Vocational

Format can be adapted to fit the needs of many and varied users.

from the W.O.A.F.C., SEE APPENDIX B FOR FURTHER CREDITS

II. THE JOB ANALYSIS DATA SYSTEM IN THE SOCIAL & HUMAN SERVICES

The purpose of the job analysis data system in social and human services is to structure the planning, functioning and production of career advancement programs for successful achievement of their individual purposes. The process of system development as described in Section I results in the following immediate products for the program:

1) definition of overall purpose and goals of the program and an ability to measure progress towards these specific ends: definition of exactly what kind of human services advancement is desired;

2) realistic assessment of what can be done: the immediate objectives within time, resource, and manpower constraints;

3) a technical instrument for the collection, analysis, and control of data;

4) criteria for evaluation.

The data system (number three above) controls the parallel development of a core curriculum model and a career ladder model. Although uniquely separate, they work together to become a total career advancement program that utilizes both educational and employment objectives. For instance, the goals of SSAP have been:

1) to use job analysis techniques to identify the nature and scope of job tasks and physical, mental and interpersonal job skills;

2) to organize tasks and skills into a career sequence or hierarchy of jobs with increasing responsibility and compensation (Career Ladders or Lattices);

3) to articulate secondary, post-secondary and higher education programs (Model Curricula) which will qualify students and workers for paraprofessional level jobs and for advancement commensurate with their ability, education, and experience.

Job analysis is fundamental to SSAP's career advancement program. Looking for new ways to organize and implement both educational and employment objectives, SSAP found that job analysis challenged the heart of the problem by exposing the inequities of the jobs themselves.

The environment of the job analysis data system encompasses all the conditions, values, and purposes that are outside the system and which operate as either constraints or resources for the achievement of purposes. Some of the constraining factors are money, time, manpower, political considerations, and anything else indicated by the system purpose, goals, and objectives.

The immediate objectives of the system are derived from a realistic assessment of purpose, goals, constraints and resources, and describe the sequential products which come together as the steps to the final achievement of system purpose. For example, the immediate objectives of the Social Service Aide Project, Phase I (1968-1969) were:

1) to secure the cooperation of a select number of social and human services agencies in the Chicago area to allow data collection;

2) to elicit the cooperation of the following Chicago-area community colleges so that their teachers could interview workers, collect data, and act as consultants: Chicago City College, Thornton Community College, Prairie State College, and Central YMCA College;

3) to collect, code and sort as many task descriptions as needed of jobs currently being done by workers in the cooperating social and human services agencies;

4) to regroup collected and analysed data to parallel employment (career ladder) and educational objectives (core curriculum);

5) to complete a career ladder model that is a graded sequence of tasks grouped according to areas of work, complexity, and the needs of clients;

6) to outline a core curriculum derived from the graded sequence of tasks grouped according to areas of knowledge, complexity, and kinds of actions and processes needed to do the tasks. (see Chart B).

Securing the cooperation of agencies and schools is a necessary function but will not be described further here. As a procedural aid, specific subsystems can be recognized within the objectives and become a part of the analysing mechanism. Subsystems are those fundamental processes that are linked together by the purposes, goals and objectives, and comprise the basic moving parts of the whole system. Within these many subsystems, maintenance as a constant and daily check becomes very necessary. Where one or more aspects of a sub-system become incompatible, those aspects must be changed.

A. Data Collection System - The basic data for a job analysis approach are task descriptions collected through a process of interviewing human and social service workers in existing jobs and listing specific tasks that are performed. A task is a single, whole unit of activity that is directed toward specific ends, which a worker is employed to accomplish. A task description is the written process of that unit of activity. It describes what is done and towards what ends. It differs from a job description in that a group of generally related task descriptions can make up a job. A single task is not the whole job.

Collecting the tasks performed by present human and social service workers serves at least two purposes: 1) it allows the researcher to see exactly what lies behind the job and its title; 2) it opens the once rigid job to change and restructuring where necessary. Because the task description is one of the bases for any further analysis or conclusions, it must be written succinctly and well, always keeping the later analysis in mind. The following are necessary standards for writing good task descriptions:

1) A task description must state exactly what action is being performed to whom or what, how and to what end, so that anyone reading it can comprehend the motions.

2) A task description must be both coherent and discrete. It must be indicative of the worker's job and be related to the goals of the agency. It cannot describe more than one action to be performed.

3) The task description must show a knowledge of the distinction between what gets done and what the worker does. An intake interview of a client is something that gets accomplished. The worker does a variety of tasks to do that particular part of a job. (See Appendix A for further examples of task descriptions)

B. Coding Systems - To continuously deal with thousands of task descriptions makes analysis an almost impossibly wordy job. Coding systems transfer onto numerical and sometimes letter scales the degree of complexity, the level of training, the areas of knowledge, and the areas of work that the tasks describe. The sorting and shuffling of tasks can then be a matter of locating and identifying numbers instead of whole sentences.

Codes and scales are generally derived from an analysis of ways, levels, and characteristics of knowing and doing. The scales can be used to code any task in any job because knowing and doing are basic to any accomplishment. (See Appendix B for SSAP scales and coding systems).

C. Sorting and Clustering Systems - The sorting and clustering systems are the mechanical processes of categorizing coded tasks into the same or similar levels of classification, much like sorting and grouping stones according to objective criteria of weight, color, size and cost.

Sorting is a process of separating one set of coded tasks from another. This can be done manually, or by mechanical card sort. Clustering is the process of bringing together similarly coded tasks in specific areas designated by the desired end-result of the subsystem. Regrouping is the process of selecting and redistributing clustered tasks into areas of work (occupational field) and areas of knowledge(what is needed to be known to do the tasks).

CHART C: SAMPLE KEY-SORT CARD

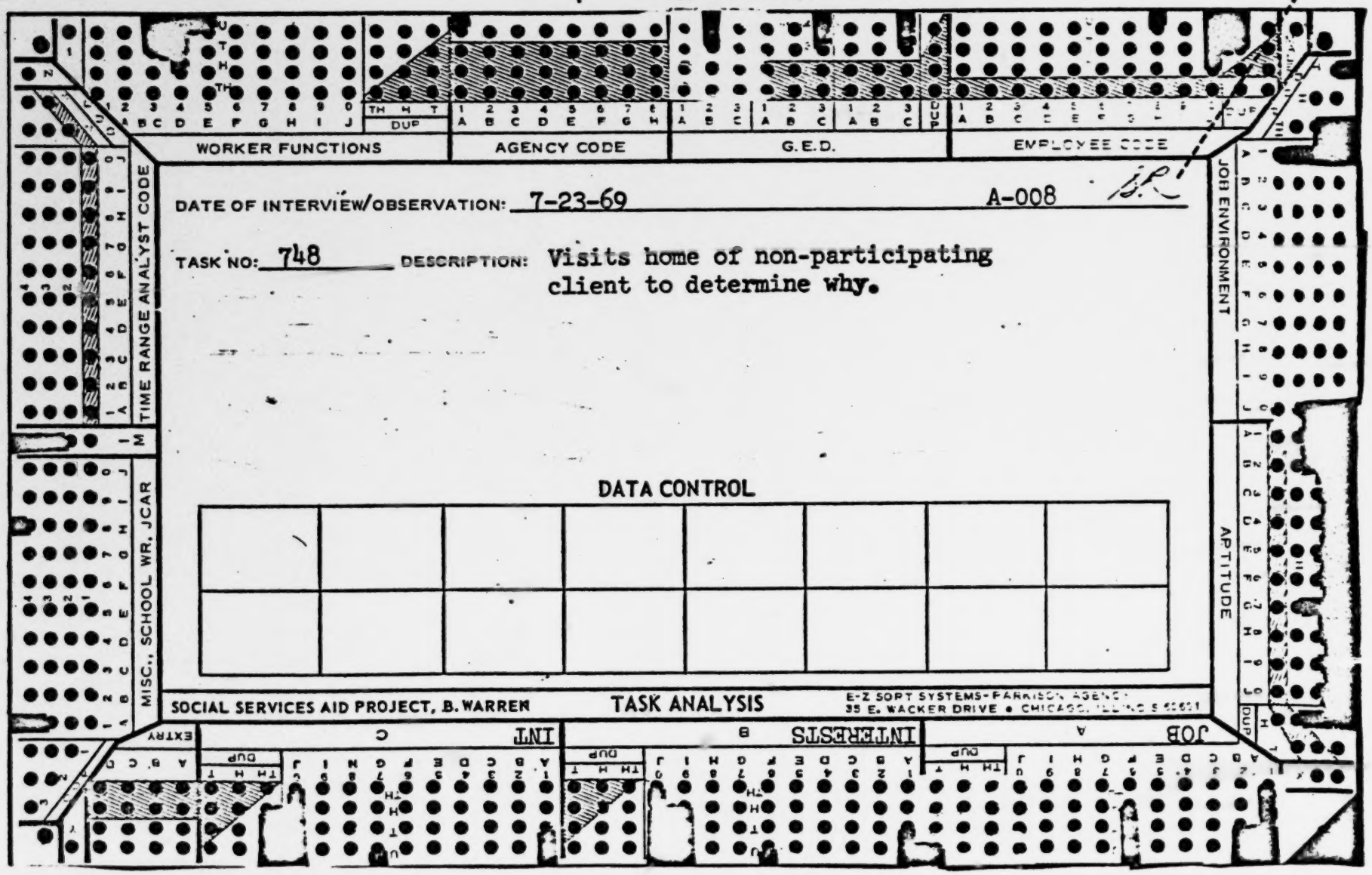
Worker Functions
4-3-5

Agency Code
A

General Educational Development
Reasoning Ability
Mathematics
Language
B-2 C-3 C-3

Employee Code
008

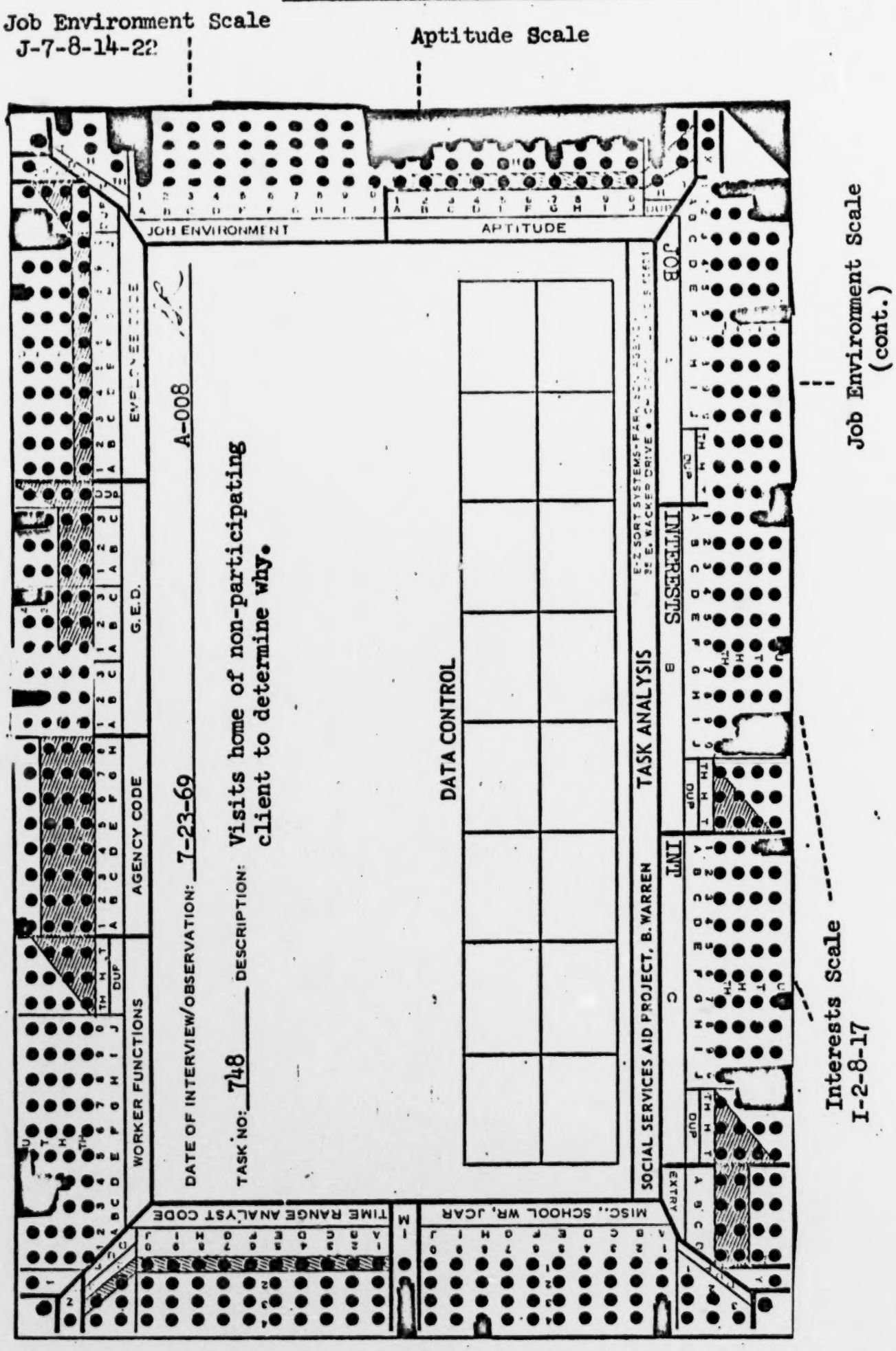
Analyst's Initials



Masters Degree-----

18 years of education

CHART C: SAMPLE KEY-SORT CARD (2)



Tasks sorted according to degree of complexity (at A.A. degree level, and above and below A.A.), level of training, and areas of work tend to cluster to gradations of a slowly emerging career ladder sequence. The task and its characteristics can then be coupled with levels of work and their requirements. Tasks sorted according to degree of complexity, level of training, and areas of knowledge cluster to form the kinds of training and courses needed to perform those tasks. Regrouping clusters of tasks results in both job descriptions and a career ladder with one set of objectives, and in a core curriculum and training sequences with another.

III. ANALYSIS

A. Definitions of Employment and Educational Objectives - The goals of SSAP, as listed in Section II, have taken into account educational and employment objectives. The attainment of these objectives is not primarily in the control of SSAP within the design of its own systems approach. Because of the many components involved, these objectives can only be met by a coming together of all the responsible agencies, institutions, organizations and individuals to specify the necessary steps toward their achievement.

EMPLOYMENT OBJECTIVES

a) greater opportunities to acquire, retain, and grow in jobs;
b) salaries commensurate with skills and the kinds of work done;
c) carefully designed job descriptions that honestly relate one-to-one with the work actually performed;
d) implemented career ladders for all workers, with mobility in all growth directions;
e) employer recognition of the potentials of the paraprofessional and indigenous social & human services worker to perform high level tasks required of them;
f) employee growth in realization of potential and satisfaction in the work situation;
g) greater correlation between work performed and the needs of the client population;
h) advancement based on workers' competency to perform tasks within standards of performance and a worker review related to joint worker-employer objectives.

EDUCATIONAL OBJECTIVES

a) social and human services courses that prepare the worker for real work situations;
b) academic credit given for life and work experience either extra to or commensurate with regular course work;
c) academic recognition of A.A. level education and training by institutions of higher learning;
d) greater cooperation between college and high school administrators and curriculum developers with agency administrators and funding sources for in-service training, released time, cooperative work-study situations and practicum courses;
e) a basic core-curriculum for all human and social services workers with credits transferable to other colleges.

B. Task Regrouping

1. Career Ladder - A career ladder is a graded sequence of job positions starting at the trainee level and progressing through technician and technologist levels to professional job positions. Its hallmark attempts to be the worker's ease of mobility from one level to the next, as well from one job area to another on the same level. The following steps were taken by SSAP in developing its career ladder:

a) Task inventory sheets with their coded classifications were prepared. These ultimately listed all task descriptions on, above and below the A.A. degree level. These were later to be transferred to the edge - punched card-storage system for quick clustering.

b) The tasks were loosely sorted on the basis of knowledge areas into the following somewhat arbitrary groups:

1. Supportive Administration
2. Mental Health - Therapeutic Counseling
3. Child Care
4. Group Work
5. Community Organization
6. Informal Counseling (includes interviewing)
7. Teaching arts and crafts
8. Resolution of Intergroup Conflicts
9. Community Relations
10. Tutoring
11. Physical Therapy
12. Orientation

c) Definitions were supplied for the above areas of work (e.g.: 6. Informal Counseling: Initial and Supportive role to enable the individual to solve educational, vocational, physical or mental health, economic and legal problems).

d) The areas of work were reduced to seven occupational fields, each distinct, but not separate from the others. These seven areas represent a realistic adaptation of the system goals to constraints on the system. The following list includes the knowledge areas in the grouping above, and also describes coherent job areas as presently found:

1. Social Service Administration
2. Mental Health
3. Health Service
4. Child Care
5. Community Organization
6. Social Case Work
7. Group Work

e) The developmental scheme calls for six steps in the career ladder, from trainee to professional, because upper and lower limits were implied in the development of a ladder by the low educational trainee level and the existing four-year B.A. or B.S. degree. Paralleling two of these steps, a core curriculum was developed for aiding those who would desire to advance on the ladder to the next level by acquiring the necessary knowledge and skill. Paralleling the upper areas is the four-year B.A. or B.S. degree curriculum in human and social services and the subsequent graduate-degree programs. The characteristics of SSAP's career ladder model include:

1. Entry into the human services career ladder is based on a combination of competency, training, and education, and is not only at the trainee level. Entry is available on all levels.

2. Trainees coming into the career ladder having less than a high school education or equivalency examination can begin a job and continue in his education and training for both upward and lateral mobility.

3. Accreditation of life and work experience by both agencies and educational institutions, along with various equivalency examinations allows for mobility by various means.

4. For every completed year of either formal education or in-service training and life or work experience recognized by equivalency examination, the human services worker can be recognized for his increased abilities and move up or out of the career ladder. (See career ladders.)

f) The tasks were distributed into the six sections of the ladder based on 1) the seven occupational fields, 2) the sorting within the coded classifications, and 3) the levels of skill and knowledge required to perform the work, ranging from zero at trainee to high level specialization at the fourth year of college and beyond.

g) Job descriptions were written for five levels within the seven occupational fields. The task clusters and their sequence in the career ladder became the basis of the descriptions.

2. Core Curriculum - As a sequence of related courses, the core curriculum becomes the basic working knowledge and skills with which a worker's desired advancement is possible. The social and human services core curriculum developed by SSAP-I is comprehensive as a basis for almost any future career. Although accented for the human and social services, the SSAP-I core curriculum includes material that is essential to all fields of people-oriented work. A derivative

of task analysis, the core is unique in that it is directly related to and a consequence of work presently being done. It prepares the human services worker more adequately than simply in-service training, for any further work in the social and human services, from trainee level jobs to specialist areas (see Career Ladders).

Since each course covers a particular area of knowledge and skills not covered by any other, each course is crucial and essential to the whole curriculum. Related skills and subject topics are grouped into single courses so as to avoid unnecessary redundancy. However, the core, as developed in Phase I of SSAP, was primarily a model whose outlines needed to be expanded in Phase II into fully documented syllabi. Changes are inevitable within the pressures and confines of resources and constraints. Thus, the following steps were taken by SSAP staff in Phase I to structure a core curriculum outline:

a) The tasks, distributed into the twelve areas of work listed above, were examined to identify the process performed, or what was needed to be done to complete the task (e.g., Process for 6. Informal Counseling: Interviewing to 1) Identify the problem; 2) Help resolve the problem; and 3) Determine necessary and amount of follow-up).

b) Looking again at the tasks, areas of knowledge were identified from the processes (e.g., 6. Informal Counseling knowledge areas:

1. How to make the client comfortable
2. How to listen for moods and attitudes
3. How to ask questions
4. How to establish empathy
5. Significance of non-verbal communication
6. How to recognize emergencies of potential crises
7. How, when, where to make referrals
8. Necessity of confidentiality
9. How to terminate the session.)

c) Areas of knowldege (what one needs to know) were sorted and compared to remove duplications so that common areas would be obtainable from one course.

d) With removal of duplications, the areas were grouped according to their relatedness and complexity.

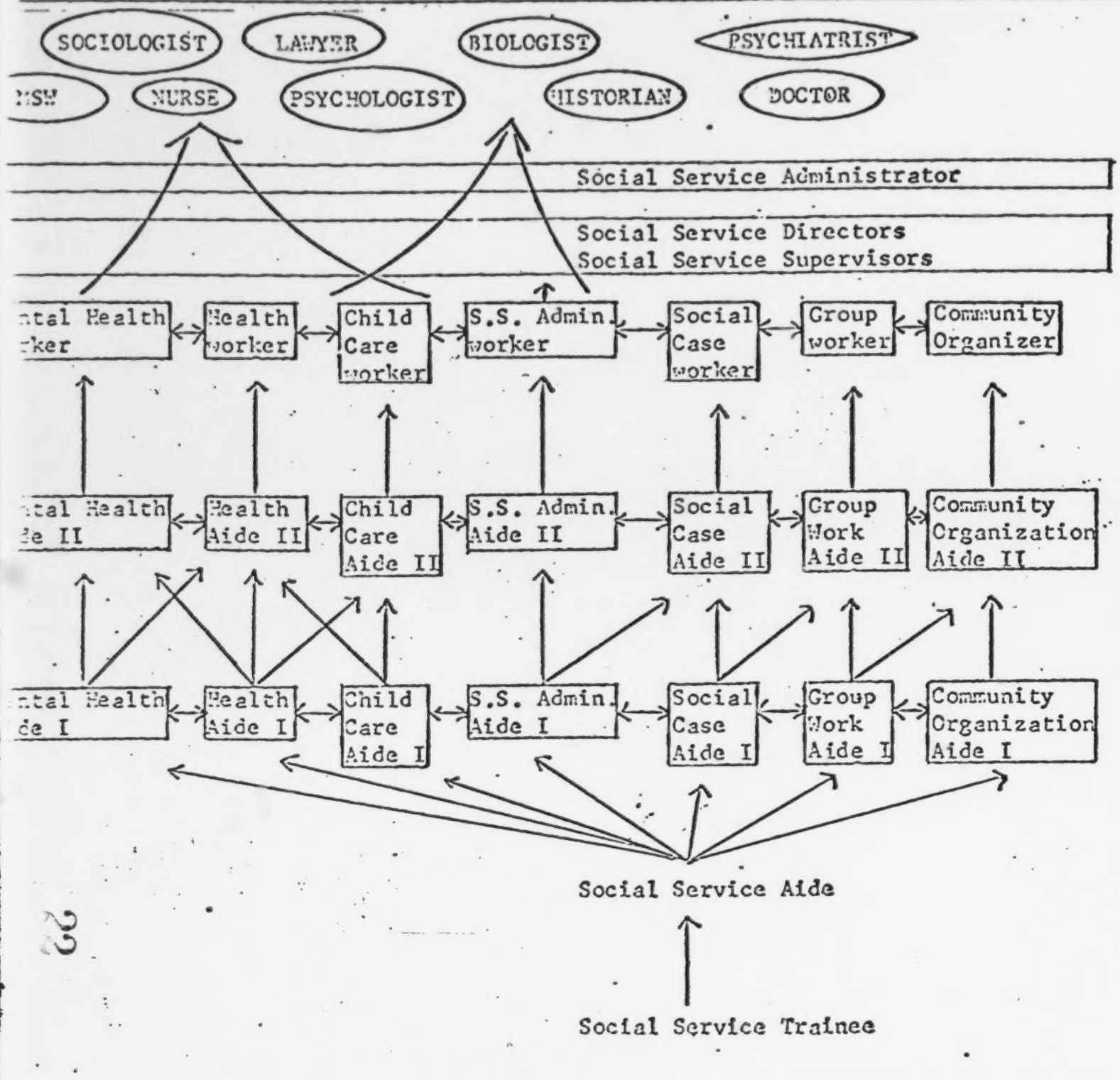
e) With the necessary accommodations for the time required to deliver the course, and some considerations of course sequences, the grouped areas were regarded as representing courses in the core curriculum.

f) Course contents were outlined.

g) Courses and scheduling were adjusted to account for necessary sequences of courses, the requirements of the career ladders, and credit requirements of schools for transferability. The first year of the

core curriculum would supply the necessary knowledge and skills to enable a trainee to progress upward on the career ladder to the level of a human services technician. The second year of the core curriculum supplies the necessary knowledge and skills to enable the worker to move into the next higher technician and technologist levels.

PHASE I MODEL OF SOCIAL SERVICE CAREER LADDER



Specialists
--other levels of the ladder that involve specialization requiring Ph.D. and M.A. or M.S.

Administration
--greater responsibility with raised salary; does not necessitate Ph.D. or M.S. degree level.

Social Service Worker
--B.S. or B.A. degree; follows as an elaboration of the Aide II level, with salary increase, and greater responsibility in a specialized area.

Aide II
--first year beyond the A.A degree level; possibilities of specialization and/or change to another area of social service; open to further education/training.

Aide I
--two year A.A. degree level; specialization by choice; in-service equivalency beyond the aide level.

Aide
--one year level in A.A. degree course schedule; equivalent to in-service training beyond the trainee level.

Trainee
--entry level with high school education or less.

PHASE II MODEL
HUMAN SERVICES CAREER LADDER

(A) Occupational Status and Education	(B) Life/Work Experience	(C) Career Options	(D) Range of Significant Functions People	Data	Things
Professional Doctor's degree Master's degree	6 yrs of progressive experience with Equivalency Examination	Any combination of (A) and (B) to ascend career ladder with least time and expense, and to achieve the most comprehensive knowledge, skills, and know-how.	0 1 2	0 1 2	0 1 2
Technologist II Bachelor's degree	5 yrs of progressive experience with Equivalency Examination		1 2 3	1 2	1 2
Technologist I 3rd yr. College Certificate	4 yrs of progressive experience with Equivalency Examination		2 3 4	2 3 4	2 3
Technician II Associate in Arts Degree	3 yrs of progressive experience with Equivalency Examination		3 4 5	3 4 5	3 4
Technician I 1st yr. College Certificate	2 yrs of progressive experience with Equivalency Examination		4 5 6	4 5	4 5
Trainee High School or less	1 yr of training before taking Qualifying Examination for Technician I position.		5 6 7 8	5 6	5

IV. ASSESSMENT AND EVALUATION OF THE SYSTEM

Any final assessment and evaluation of the systems approach depends largely upon the question, "Was the systems purpose achieved? Why or why not?" The systems approach, being a structure primarily designed to achieve a stated end, must be evaluated on the basis of that achievement. SSAP completed Phase I, having attained its objectives (listed in Section II), and advanced toward fulfillment of its goals and purposes. Some scheduled deadlines for subsystem completion were broken, necessitating many revisions of schedule, changes of objectives, and reanalysis of basic coding systems. The problems encountered were generally ones of human relations, training of interviewers and revising aspects of the coding systems.

Human relations problems stemmed from the necessity of bringing together many people whose attitudes, educational backgrounds, emotional stability and occupational fields sometimes conflicted. Generally foreseen by SSAP staff, cooperation towards a mutual goal was to be the major bargaining point, to which the majority adhered. The problem of working together towards a mutually satisfactory goal must be incorporated into the initial systems approach planning stage. It can be safely assumed, after SSAP's first year, that human relations problem solving has become an integral part of further system planning.

Although SSAP did involve the interviewers in some data collection and coding training, the somewhat analytical nature of the process of interviewing, of the coding systems, and of the process of writing task descriptions tended to be an obstacle. The coding systems proved to be a stumbling block for some, because the codes began to be used for judging or rating the individual doing the task rather than the task itself. A code rates the task as described within a specific range of complexity or kinds of actions. A code does not judge the person who does the task, nor does it rate that person as being in any way inferior or superior to any other person. Along the same lines, a task description is as objective a statementof an activity as can be written if the standards are followed. However, some task descriptions did not adhere to the qualities of good writing listed earlier, and had to be re-written before coding could be accomplished. As a new problem to be overcome in future planning, the training of interviewers and data collectors must be comprehensive enough for a thorough acquaintance of all the objective analytical definitions and standards. As a problem of maintenance, task description re-writing was a necessary step in achieving the scheduled objectives of coding.

Coding systems revision was an on-going process which involved continous feedback by the program staff on their progress. Where codes were irrelevant to the tasks being done, they were changed or dropped to accomodate the widest possible variety within the social and human services. Where the code inadequately represented the diversity of levels as represented by the tasks, the scales were extended or new sub-divisions were made.

As a very flexible instrument on the track of an overall purpose, the systems approach achieves its ends, measures its progress toward those ends, and allows alteration where constraints are not synchronized with resources.

Any further evaluation of the system products (career ladder and core curriculum models) can best be made through demonstration of the models' viability within real work and college situations. As an indicactor of achieving all of the employment and educational objectives (listed in Section III), the models can be implemented within real academic institutions and social and human service agencies. Beyond the appearances of a final researched product, the ultimate test as to their effectiveness and viability comes from seeing the models work. Thus, Phases II and III of SSAP, beyond conducting any further research, are the extended evaluative and maintenance aspects of putting the career ladder and core curriculum to work (see Bibliography for list of SSAP current reportive materials).

CHART E: Flow Chart - Summary of Systems Approach to Functional Task Analysis Data System

I. Preliminary Analysis and Development of Systems Approach
- A. Purpose
- B. External Constraints or Environment
- C. Resources
- D. Components or Subsystems
- E. Maintenance and Evaluation of System

II. The Job Analysis Data System in the Social and Human Services
-Definition of Objectives within the Scope of Preliminary Analysis
- A. Data Collection System
  -definitions and standards of task descriptions
- B. Coding Systems
- C. Sorting and Clustering Systems
  -edge-punched card-sort system

III. Analysis

A. Definition of Educational and Employment Objectives

B. Process of Regrouping Tasks under Separate but Parallel Headings

1. Career Ladders
   - a. definition of Areas of Work
   - b. task clustering
   - c. career ladder formation
   - d. job descriptions

2. Core Curriculum
   - a. definitions of processes required to do the areas of work
   - b. definition of Areas of Knowledge (what one needs to know)
   - c. task clustering
   - d. contents outlined

IV. Assessment and Evaluation of the System
-adherence to and the attainment of the Purpose; **underlies criteria** for assessment and evaluation
- possibility of implementing findings and models to make further evaluation in the light of educational and employment objectives

V. IMPLICATIONS

The systems approach as an operational procedure will continue in Phase III to be further evaluated, refined, and expanded in research and implementation. However, the systems approach has wider possibilities than the ones described in this technical paper. As a tool for analysing and building curriculum, careers, and opportunities, the systems approach can be utilized in many unique ways and situations. Possibilities aimed at the educational and employment objectives listed earlier could be implemented in other occupational fields for more coherent and useful advancements.

In education, all courses could be the partial product of a functional task analysis system where course content would be more closely allied to personal student behavior, future goals and the needs of the school rather than curriculum development based only on the theorizing of a small group of teachers. Task analysis, in its many variations, could bring class work much closer to real life by presenting learning in an atmosphere of daily practice by doing. Analysing student and teacher behavior and coordinating it with learning in all the disciplines could result in a school system keyed into the real process of learning that each person accomplishes on his own from the moment of birth. Educational and training institutions utilizing this approach have a clear advantage over the less rational and less systematic approaches to curriculum development.

In employment, the problem of determining the right jobs for the right people could be solved, perhaps, by a task analysis synchronization of jobs and those desiring to fill them. Rather than politics, race or gender, raw statistical qualifications and requirements in the form of analysed codes describing interests, temperaments, work functions, general educational development, etc., could be a primary basis for hiring. The external appearances of credentials, physical characteristics, or political connections could begin to be eliminated by a systems approach to equitable hiring practices, reasonable job descriptions, systematic career growth sequences, and improved personnel changes.

The systems approach, as shown by SSAP in its Phase I and II analysis and implementation, can lead to a process for restructured jobs that allow greater potential for worker advancement. The systems approach can derive a coherent core curriculum related to the student's present and future lives, to their work experience and to the expansion of future possibilities in the world of work and leisure.

However, the realization of all that is possible is a much more difficult process, if not fully impossible, than a small range experimental success. The technology of data analysis and the whole systems appraoch requires much more refinement, much more

accuracy and objectivity than currently exists. In order to be able to implement any of the above implications in any scale, the basic methodology must have been carefully and scientifically derived, without at all depriving human beings of any of their non-measurable aspects, their emotions or their capabilities to out-perform themselves. Refinement of the system involves perfecting the coding and measurement of primarily those cerebral operations that distinguish a problem-solving and planning task from the physical operations that are involved in a mechanical and repetitive task.

Since the basic technology of systems analysis began as a means of stepping-up assembly-line production during the Second World War, the kinds of refinement necessary for the high-level intangible functions in the human services has only lately been begun. SSAP is about the work of initiating this new field of inquiry in using task analysis within actual work situations in the human services that involve much more than simple manual labor. The human services field is a large and burgeoning vocational and training area that very much needs clarification and systemization. However, it is also unrealistic to assume that a project of this limited scope could arrive at all the answers or even at the only rational approach to a solution.

However, since many employers and institutions of learning have not given serious attention to this kind of endeavor, SSAP expresses its research in lieu of anything better, and in the hopes that others will join in the search for knowledge and scientific discovery. As any scientist or researcher knows, struggling to attain truth is a very painful and painstaking process, but not making the attempt is an even more devastating process in the long run. In a world that prides itself in its expanding technology, its global communications, and its potential for greater achievement, the search for truth in all fields must not become compromised. Ultimately, SSAP recognizes that the challenge of innovative and exemplary vocational-technical education requires a more adequate response in the form of actual changes made on a scale that really makes a difference, for:

> "Presistent unemplcyment and underemployment of the disadvantaged is incongruous in the face of our urgent need for trained personnel to provide more and better education, health, welfare, and other services and to cope with our increasingly sophisticated technology."
>
> (from a memorandum written by David S. Bushnell, when director of the Division of Comprehensive and Vocational Education Research, BR/USOE/DHEW)

Section VI

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Section VII
APPENDIX A: TASK DESCRIPTION SAMPLES

BB-001 Coordinates with community clinics in the procedures, referral methods, statistics, and follow-ups of patients to insure uniformity of standards.

BB-002 Conducts group therapy sessions and counsels the patients for better adjustment.

BB-012 Supervises group therapy sessions to help workers to learn the use of this type of therapy.

BB-003 Diagnoses and evaluates applications for hospitalization to determine their needs and how to meet them.

AA-006 Makes out physical therapy schedules for the patients.

E-002 Supervises members in game room to provide leadership and sportsmanship.

E-002 Teaches rules and techniques of wrestling to develop physical coordination.

E-002 Recruits members from community to join physical health and education program.

E-002 Opens physical activity rooms for staff and members.

E-003 Enforces agency rules among gang members to prevent disruption.

A-001 Writes case history information and daily attendance reports on patients records for use in subsequent evaluations.

A-001 Schedules workers for intake duty.

A-001 Labels completed case history forms with the programs that the clients are to attend.

A-001 Terminates files on all cases that are closed or transferred. May include sorting them according to program, transferring files, and counsulting with supervisor if problems occur.

A-001 Performs intermediary functions to help hospitalize a client. Task may include: interviewing relatives for information, calling the hospital, giving information at the reception desk, giving relatives feedback from hospital, arranging for transportation for patient and relatives.

A-002 Makes home visits to observe and evaluate the progress of the clients within the framework of agree-upon goals

A-008 Makes home visits to personally communicate with residents who have not responded to letters concerning services available in the mental health center, by trying to educate them in the concepts of mental helath and extending an invitation to come to the center.

Section VII

APPENDIX B: CODING SYSTEM SCALES

The following scales are adapted from the publication "Job Restructuring" prepared by the Wisconsin Occupational Analysis Field Center (12-1968). The publication was developed by Mr. Harry Nussberger, Job Analysis Supervisor, and Mr. Frank Potts, Research Analyst under the general direction of Mr. William F. Miller.

In many instances, the following scales are the result of radical changes of the form of the W.O.A.F.C. scales which were used as a general guide and point of departure. These scales have been freely modified to suit SSAP purposes by allowing greater flexibility and usefulness.

Throughout this document, asterisks (*) indicate where we have made additions or radical alterations. All unmarked items will be those that were extracted substantially unchanged from the W.O.A.F.C. report.

Scales by Barry Warren as described in Social Service Aide Project Final Report, September, 1969

Note: The following codes are still undergoing modifications and further refinements due to new research, problems, and new uses.

G E D

General Education Development

1. Reasoning Ability

2. Mathematics, Arithmetic, Numbers

3. Language

G.E.D. consists of the above listed items. In the design of the G.E.D. levels we have taken our most marked departure from the guide we have been using (the W.O.A.F.C. Job Restructuring Report: 12/68). We have given more space to the mathematics scales because of basic disagreement with W.O.A.F.C. mathematical achievement levels. Our language scale is modified to show as nearly as possible logical transition from level to level. We have found the reasoning scale of the G.E.D. as listed in the W.O.A.F.C. to be inadequate for our purposes, and not leading to a logical scaling of reasoning ability, and therefore, inconsistent.

What is proposed, briefly, is to place the reasoning scale of the G.E.D. on a more coherent basis. Reasoning in man takes place in terms of various symbols, unless it is the form of reasoning called intuitive in which all the intermediates (symbols) are eliminated. The symbols are the carriers of information (Data) about Reality to the mind, as well as the means by which mental processes are expressed, and information extracted from the mind and communicated to others. Furthermore, symbols are the means whereby reality is manipulated more conveniently in order to provide new information or new relationships for study. The manipulations are governed by various rules organized into systems. Those functions requiring the greated knowledge and use of such manipulative systems, and great facility with symbology (and consequently the data so represented) comprise the highest categories of reasoning ability (non-intuitive). There are a set of middle operations conducted upon the symbols or data. These operations are of a setting up and predigesting variety, and those functions requiring knowledge and facility with these comprise the middle ranges of reasoning ability. After data has been treated, understood and expressed as new information, action proceeds from the data. In addition, prior to the treatment process, certain supportive maintenance functions are required, but which do not entail any real treatment of data in any significant manner. Those functions requiring action proceeding from treated data or action of a supportive nature comprise the lower levels of reasoning ability.

Thus we arrive at three sets of levels: A - the assimilative, interpretive, and judgmental levels; B - the predigesting levels; C - the levels of instructed functions.

We are going to call A, B, and C Categories, and we are going to further subdivide them, each into three subcategories or levels of reasoning ability: A_1 A_2 A_3, B_1 B_2 B_3, C_1 C_2 C_3 or A-1, 2, 3; B-1, 2, 3; C-1, 2, 3.

Each higher level or subcategory assumes the skill of all those placed lower than it within the category. Each higher category assumes the skills of the categories placed lower than it. The categories and levels shall be listed from lower to higher.

GED
Reasoning Ability

C-1 Simple one or two step operations performed upon instructions where circumstances of work are non variable. (E.g., Delivers articles, messages; receives, dispenses, loads, unloads, moves people, things; runs machines).

C-2 Follows complex instructions, with variable circumstances of work. (E.g., Stocks supplies, checks stores, guards, cleans, works as aide (nurses), relays, sorts records, accompanies, brings food, installs simple equipment, runs machines).

C-3 Supervises or instructs lower C level as well as coordinates their function with one another and with higher levels of operation. Supervises for above mentioned functions by directing goods, equipment, and people. Controls and organizes work teams. (E.g., Runs play groups, social activities, lifeguards; polices; carried out tactical instructions; repairs simple equipment; runs machines).

B-1 Collects, copies, arranges data or materials entering into the structure or exiting from it. (E.g., Clerks, survey clerks; runs machines; arranges outings, social functions; receptionist, interviewer, cashier).

B-2 Codes, installs sophisticated equipment; compiles, classifies incoming and outgoing information, material, and people. Computation begun. Does computer coding; makes graphs; charts; processes information, tests. (E.g., Nurses; gives therapy; repairs sophisticated; mechanic, electrician, carpenter, technician, musician, secretary).

B-3 Supervises all lower B levels and C-3 supervisors. On this level information or data is verified, conclusions drawn, decisions made and directions issued. Here also, any computations are completed. Supervises all above. (E.g., Runs work teams, guides work and study groups; figures costs, taxes, accounting; programs computers; runs social workshops; director, groupworker, investigators).

A-1 Data is translated from language to language, or system to system. Reports or extracts prepared and issued. Mode of presentation decided upon and designed. Representations of data prepared and issued. Plans from above carried out. (E.g., Interpreters, writers, composers, commercial artists, readers, psychiatric social worker, social worker, teacher).

A-2 Data is subjected to some analysis, calculations, and computations, Manipulations of a sophisticated variety are carried out upon it. Information is extracted from data, and new relationships drawn. Exploratory operations are carried out on problems and data. Plans are completed. (E.g., Engineers, chemists, mathematicians, statisticians, doctors, psychologists, physicists).

A-3 Final manipulations are performed. Data analyzed, synthesized, and interpreted in a finalized manner. New ideas and symbols are formulated and created. Definitions are fixed and all lower levels are supervised. Plans are formulated. (E.g., psychiatrist, theoretical scientist, architect, research scientist, City Planner ....)

G E D

Mathematics - Arithmetic Scale

C-1	Counting: Must be able to count four significant figures
C-2	Addition/Subtraction: Conversant with processes of addition/subtraction of whole numbers of all varieties
C-3	Multiplication/Division/Fractions: Know how to multiply/divide whole numbers
	Work processes of addition and subtraction on common fractions and decimals
B-1	Fractions/Multiplication/Division: Know how to multiply and divide common franctions and decimals
B-2	Percentages/Interests/Compounding Tax Tables/Charts/Graphs/Algebra: Exponents, logarithms, linear equations, quadractics. Permutations, Combinations
B-3	Algebra: Fractoring Equations 2 and 3 unknowns. Determinants, matrix algebra, circular functions
	Plan Geometry/Trigonometry/Probability: Product of probabilities, Independent probability . . . . .
A-1	Plan Geometry/Analytic Geometry/Trigonometry/Statistics
A-2	Statistics/Calculus/Differential equations/Modern Algebra/ Vector analysis
A-3	Open. Mathematical skills beyond those listed above.

G E D

Language Development

C-1	Writing:	Able to print simple sentences, names, addresses, and numbers.
	Reading:	Can read simple sentences. Vocabulary approximately 2,500 words. Reads Comicbooks, compares work similarities.
	Speaking:	Speaks simple sentences with reasonable word arrangement and delineation of past and present tenses.
C-2	Writing:	Writes simple and compound sentences with interior and exterior punctuation.
	Reading:	Can read with understanding compound sentences. Reads instructions for carrying out designated operations. Knows how to use a dictionary.
	Speaking:	Speaks clearly and distinctly with appropriate pauses and emphasis.
C-3	Writing:	Writes complex as well as compound sentences, punctuates well and utilizes perfect and future tenses.
	Reading:	Can read with understanding complex sentence structure. Vocabulary size of 5 to 6,000 words, can use the dictionary to look up words.
	Speaking:	Able to speak as above, but incorporating good conventional usages with all tenses.
B-1	Writing:	Writes reports. Prepares schedules. Fills out questionnai: applications, and other forms.
	Reading:	Reads magazines, novels, atlases, encyclopedias.
	Speaking:	Able to give verbal descriptions of a complete nature. Uses good English, with well modulated voice before small audiences.
B-2	Writing:	Writes business letters and prepares summaries. Makes use of all parts of speech and punctuation, uses the proper format for preparing work.
	Reading:	Road manuals, peridicals ..... etc. Uses a thesaurus and an encyclopedia.
	Speaking:	Able to give detailed descriptions, instructions, and explanations. Can speak fairly well extemporaneously.

B-3	Writing:	Writes descriptive essays and expositions.
	Reading:	Novels, poems, journal, are read with general understanding.
	Speaking:	Able to speak on a variety of subjects extemporaneously and to engage in dramatics.
A-1	Writing:	Writes translation and technical reports. Writes songs and/or poetry.
	Reading:	Can read material in foreign texts. Reads Abstracts, Reports.....
	Speaking:	Speaks one or more foreign languages and/or specialized languages for handicapped people or animals.
A-2	Writing:	Writes argumentative essays, critiques, manuals, journal articles, and speeches.
	Reading:	Reads scientific journals, financial reports and legal documents.
	Speaking:	Able to discuss or debate, deliver lectures or highly developed explanations.
A-3	Writing:	Writes novels, non-fictional and technical material, symphonic music, composes journal articles and theoretical works.
	Reading:	Theoretical works (political), social, (scientific), non-fiction.
	Speaking:	Able to speak well before large audiences on a variety of sub

WORKER FUNCTIONS:

The worker functions are described as they relate to Data, People, and Things. The scales have been modified chiefly by addition over those indicated in the W.O.A.F.C. report. The pattern, definitions, and use remains the same as that used in the report. The People and Data scales have been lengthened, whereas the Things scale has been shortened. Asterisks indicate our additions. All crossed entries (+) are modifications of W.O.A.F.C. material. All unmarked entries are the same as those appearing in the W.O.A.F.C. report.

Use of scales: Three-digit expression.

(1) Compare each task or element with each hierarchy and record the highest relationship for each using the entry number.

(2) Each studied task would have a 3 digit number one from each hierarchy.

(3) Entries are listed with higher functions having lower numbers. All higher numbers assume lower entries.

(4) Three digits describe work requirements to be filled.

DATA:

Information, knowledge, and conception relates to People, Data, or Things. Obtained by observation, investigation, interpretation, visualization, interrelation, and mental creation. It may be written, oral, numerical, verbal conceptual, ideational, visual. . . .

0. Synthesizing: Integrating analysis of data to discover facts and/or develop knowledge.

*1. Planning: Looking into the future; forseeing needs, services, situations before they arrive and making the necessary arrangements to provide the structures, activities and things to meet the needs. Providing the direction in which activities, functions, structures are the move.

2. Coordinating: Determining time, place, and sequence of operation or action to be taken on the basis of analysis of data; executing determination and/or reporting an event.

3. Analyzing: Examining and evaluating data. Presenting alternative action in relation to analysis may be involved.

*4. Organizing: Bringing together various data, things and/or structures in order to produce some activity or concerted action and attain some definite results.

*5. Coding: Transferring data and other information into some numerical or pictographic symbolism in order to facilitate swift computation and analysis.

*6. Translating: Placing information into a different language or a more desirable form to facilitate improved communication.

7. Compiling: Gathering, collating, or classifying information about Data, People or Things.

8. Computing: Performing arithmetic operations and reporting on and/or carrying out a prescribed action in relation to them. Does not include counting.

9. Copying: Transcribing, entering, or posting data.

10. Composing: Judging the readily observable functional, structural, or compositional characteristics (whether similar to or divergent from obvious standards) of Data, People, or Things.

*11. Other: List separately.

PEOPLE:

Human beings: Also animals dealt with on an individual basis as if they were human.

*0. Therapy: Administration of various forms of physical or mental assistance through well developed principles, procedures, and techniques.

1. Mentoring: Dealing with individuals in terms of their total personality in order to advise, counsel, and/or guide them with regard to problems that may be resolved by legal, scientific, clinical, spiritual, and/or other professional principles.

2. Negotiating: Exchanging ideas, information, and opinions with others to formulate concerted policies programs, or models of action.

3. Instructing: Teaching subject matter to others (also animals) through explanation, demonstration, and supervised practice.

4. Supervising: Determining and interpreting work procedures for a group of workers, assigning specific duties to them, maintaining relations among them, and promoting efficiency.

*5. Interviewing: Talking or otherwise communicating with others for the purpose of extracting information or evaluating a particular or generalized circumstance.

*6. Arranging: Bringing together the necessary ingredients in terms of people, situations, and things to facilitate activities, developments, and interaction.

*7. Observing-Listening: Sitting or being with another person to watch events for purposes of administration of assistance, acquisition of data, or to provide company and understanding.

*8. Checking: Following up operation, frequently routine, for purposes of ascertaining information about the delivery of goods or services, the functioning of people, or the performance of operations.

9. Diverting: Amusing others.

10. Persuading: Influencing others in favor of an object, service or point of view.

11. Serving: Attending to the needs or requests of people or animals. Also, to the expressed or implicit wishes of people. Immediate response.

12. Helping: Attending to the work assignment, instruction, or orders of supervisor. Helping applies to "non-learning" helpers. No immediate response required.

*13. Other: List Separately.

THINGS:

Inanimate objects having shape, forms, and other physical characteristics:

* 0. Servicing: Keeping various forms of equipment in working order. Repairing when broken down. Replacing when worn out.

* 1. Preparing: Getting equipment ready for use; making connection adjustments, cleaning, acquiring necessary equipment. (Cars, radios, and buses...).

+ 2. Operating - Controlling - Working: Controlling, starting/stopping, supervising the operations of various equipment, (Xerox, multilith, typewriting, therapeutic equipment).

+ 3. Operating - Driving - Guiding or steering various machines or pieces of equipment. (Cars, buses...).

4. Tending - Making adjustment (minor) and checking the operation, condition, and functioning of equipment and situations.

5. Hanlding: Using body, members, handtools to work, move, and carry objects or materials.

* 6. Other: List Separately.

APTITUDES:

The aptitude scale and definition have been left the same as they appeared in the W.O.A.F.C. report. We have made only one slight modification. In the report, a number code from 1-5 was provided to indicate the degree or level of aptitude required for a given task. We have modified and trimmed this rating scheme as is indicated below.

0. Not significant.
1. Low: Specific aptitude requirement below average.
2. Medium: Specific aptitude requirement average.
3. High: Specific aptitude requirement higher than found or expected in general population.

Numerical ratings are intended for observations use, and quick assessment by the interviewer.

Specific capacities and abilities required of an individual in order to learn or perform adequately a task or job duty are as follows:

G INTELLIGENCE: General learning ability. The ability to "catch on" or understand instructions and underlying principles. Ability to reason and make judgments. Closely related to doing well in school.

V. VERBAL: Ability to understand meanings of words and ideas associated with them, and to use them effectively. To comprehend language, to understand relationships between words, and to understand meanings of whole sentences and paragraphs. To present information or ideas clearly.

N NUMERICAL: Ability to perform arithmetic operations quickly and accurately.

S SPATIAL: Ability to comprehend forms in space and understand relationships of plan and solid objects. May be used in such tasks as blueprint reading and in solving geometry problems. Frequently described as the ability to "visualize" objects of two or three dimensions, or to think visually of geometric forms.

P FORM PERCEPTION: Ability to perceive pertinent detail in objects or in pictorial or graphic material. To make visual comparisons and discriminations and see slight differences in shapes and shapings of figures and widths and lengths of lines.

Q CLERICAL PERCEPTION: Ability to perceive pertinent detail in verbal or tabular materials. To observe differences in copy, to to proof read words and numbers, and to avoid perceptual errors in arithmetic computation.

K MOTOR COORDINATION: Ability to coordinate eyes and hands or fingers rapidly and accurately in making precise movements with speed. Ability to make a movement response accurately and quickly.

F FINGER DEXTERITY: Ability to move the fingers and manipulate small objects rapidly or accuately.

M MANUAL DEXTERITY: Ability to move the hands easily and skillfully; to work with the hands in placing and turning motions.

E EYE HAND-FOOT COORDINATION: Ability to move the hand and foot coordinately with each other in accordance with visual stimuli.

C COLOR DISCRIMINATION: Ability to perceive or recognize similarities or differences in colors, or in shades or other values of the same color, to identify a particular color, or to recognize harmonious or contrasting color combinations, or to match colors accurately.

JOB ENVIRONMENT

The job environment scale describes specific situations relative to a job within which a worker would have to adjust himself and exist.

This scale represents a major modification of the W.O.A.F.C. "Temperaments" scale. We have expanded the scale to about the W.O.A.F.C. size. The scale is intended to be as exhaustive as possible with each entry representing a specific environment factor. All asterisked entries are those of our own introduction. All crosses indicate our modification of W.O.A.F.C. scales. Unmarked entries were taken directly from the W.O.A.F.C. report.

Scale use: The letter J is listed with dashed numbers for each entry which applied to the task under study.

+1. Situations entailing a variety of duties. Many tasks to perform.

*2. Situations of little change. Task fixed little or no change.

+3. Situations of frequent change. Tasks not fixed, great variance.

+4. Situations of repetitive nature.

+5. Situations of short operations in predetermined patterns.

+6. Situations under specific instructions; little room for independent action or judgment.

*7. Situations with few guidelines; great lattitude for individual judgment.

+8. Situations that involve directing, controlling, or planning the activities of others.

+9. Situations involved with working alone.

*10. Situations involved in working with groups.

*11. Situations involved with extracting information from people or other sources.

12. Situations involved with influencing people in opinions, attitudes or judgments about ideas or things.

+13. Situations requiring adequate performance under stress and high risk.

14. Situations involving evaluation (arriving at generalization, judgment, or decisions) of information against sensory of judgmental criteria.

15. Situations involving the evaluation of information against measurable or verifiable criteria.

16. Situations involving the interpretation of feelings, ideas, or facts in terms of a personal viewpoint.

*17. Situations involving work indoors.

*18. Situations involving work outdoors.

*19. Situations involving work assisting others with external difficulties.

*20. Situations involved with assisting others with internal and adjustment problems.

*21. Situations involving transmitting information to others.

*22. Situations involved with giving instructions to others.

*23. Situations involved with providing supporting functions and services for others.

*24. Other (list separately).

INTERESTS:

This scale has been much modified over that appearing in the W.O.A.F.C. report, the latter involving ten listed items arranged in parts which were supposed to be opposites. In our view the necessity of such an arrangement was most uncertain, and we were not at all convinced of the opposing nature of the items listed in most pairs.

Our own scale involves 23 items. Our attempt has been to make each entry count for one specific interest in an approximately exhaustive list, leaning somewhat in the direction of the social service fields. According to the pattern followed consistently in this document, all entries bearing asterisks are our own additions. All entries bearing crosses are modifications of W.O.A.F.C. entries.

Interests or preferences for certain types of work activities, situations, or experiences pertain to the following scale:

The letter 1 is recorded with a dashed listing of the particular interest factors: As 1-4-21-22 would be interest scale entries 4, 21, and 22.

+1. Interest in activities with things and objects.
Machinist, carpenter, tabulator, stock boy . . . .

*2. Interest in responsibility.
Supervising, Doctor, Officer (military), Policeman, Driver . . .

*3. Interest in limited responsibility.
File Clerk, loader, packager, inductee . . . .

+4. Interest in business contact.
Executive, manager, financial clerk . . . . .

+5. Interest in technical activities.
Accounting, analyzing, statistician, actuary electrician, photographer . . . .

*6. Interest in manipulation of people.
Policeman, group worker, marriage counselor, psychiatric social worker, psychiatrists, commissioned officer (military), advertising . . . . .

*7. Interest in working with information and/or data.
Statistician, actuary, accountant, scientist, engineer, clerk, census taker, social investigator, social surveyor, dietician . .

*8. Interest in involvement with people - low level involvement.
Receptionist, buide, guard, usher, cashier, games instructor, coordinator, socializing, sales clerk, ticket agent, informant . . .

* 9. Interest in involvement with people - medium involvement.
Interviewing, observing, accompanying, testing, occupational therapy, controlling, parole officer . . . . .

*10. Interest in involvement with people - high involvement.
Teaching, counseling, casework, nursing, commissioned officer (military), clergyman . . . . .

*11. Interest in involvement with people - intensive involvement.
Actor, actress, clown, acrobat, stuntman, director, musician, singer, cinematographer, photographer, magician, games instructor, game therapist, writer, composer . . . . .

*12. Interest in work with animals.
Animal caretaker, farmer, trapper, veterinarian, zookeeper, naturalist, forest ranger, zoologist . . . . .

*13. Interest in abstract or creative activities.
Theorectical scientist, Artist, Composer, Author, photographer, cinematographer, philosopher, architect, psychiatrist, psychologist . . . .

*14. Interest in mechanical activities or practical activities.
Applied scientist, engineer, pilot, mechanic, electrician, carpenter, occupational therapist, pharmacist, doctor, lawyer, nurse . . . .

*15. Interest in activities of high risk.
Demolitions, acrobat, paratrooper, frogman, astronaut, policeman, youth worker (gangs), prison guard, surgeon, pilot, psychiatrist, spy, soldier, steelmill worker . . . .

*16. Interest in communications and dissemination of information.
Radio announcer, newsman, reporter, entertainer, social worker, commercial artist, writer, propagandist, politician, therapist, teacher . . . . .

*17. Interest in problem solving.
Architect, scientist (applied), engineer, city planner, organizer, counselor, doctor, consultant, social worker, diplomat . . . . .

*18. Interest in research or discovery.
Scientist-researcher or theorectician, explorer, prospector, social scientist, spy, criminologist, counselor, doctor . . .

*19. Interest in controlling activities.
Executive, manager, supervisor, military officer, ploiceman, governor, propagandist, advertising, mayor, psychiatrist, social worker . . . . . .

*20. Interest with a preference for interpreting information.
Interpreter (language), research analyst, scientist, critic, artist, composer, author, cinematographer, advertising consultant, psychologist . . . . .

*21. Interest in planning.
City planning, architect, group worker, counselor, family planning, organizer . . . .

*22. Other (list separately).

Section VII
APPENDIX C: JOB DESCRIPTION SAMPLE---from SSAP PHASE I FINAL REPORT

Social Service Trainee

This position of social service trainee is the basic entry level for those persons that have not yet obtained specific skills or extensive experience in the human services field.

There are no specific academic requirements or special life experiences required to attain this position beyond the trainee's manifest interest in human services. This position is a temporary one and it is expected that the trainee will progress at least to the status of social service aide.

The primary emphases of this position will be to orient the trainee to various aspects of the agency and to make assignments amenable to the utilization of individual skills and interests of the trainee.

1. Provides companionship, comfort and support for the aged or disabled clients.

2. Drives an automobile or truck to deliver bulk literature for distribution or pick-up and delivers supplies and equipment.

3. Drives a car or bus to take clients to and from the hospital, to shop, or to go on outings.

4. Helps load and unload supplies; takes inventory; and distribute them as instructed.

5. Disseminates verbal or written information among community residents.

6. Inventories and stocks a supplyroom.

7. Stores and distributes recreational equipment and supplies.

8. Assists in canvassing an area or neighborhood to inform the residents about agency services.

9. Babysits with children in order to permit clients to go for necessary services in agencies, hospitals, courts, or schools.

10. Assists in watching groups of children that need no particular specialized care on outings or at play.

11. Makes specific verbal, or written reports where requested by the supervisor.

12. Attends staff meetings as an active participant.

13. Accompanies a client on trips to the hospital and other community service agencies to provide assistance to the client where and when needed.

14. Writes letters for invalids or hospitalized clients, or for clients who are unable to write.

15. Serves as a translator or interpreter for agency or client, if the trainee speaks another language.

16. Reads stories or plays games with small children.

17. Assists in performing filing duties.

18. Assists the receptionists by operating the switchboard or answering phone calls.

Social Service Aide **1 Year level in A.A. Program**

The position of Social Service Aide is created for those persons who have completed the first year's social service course work and wish to seek employment at this time, in lieu of completing the second year's course requirements. The Aide's primary contribution will be to provide supportive services and information to clients or community residents who otherwise do not need intensive or specialized services from the agency. In addition, the Aide will frequently work in close association with senior staff members in a specialized service area of their choice.

The specific duties of the Social Service Aide may include the following:

1. Introduces self to new clients so as to put them at ease and determine why they have come to the agency. Assisting clients to complete forms, and refers or escorts clients to the appropriate department within the agency.

2. Makes home visits to see Senior Citizens and/or bed-ridden individuals. Accompanies senior citizens on medical appointments to assist them with transportation difficulties or to obtain medical supplies.

3. Works with group work aide to plan and implement social events for elderly persons.

4. Works with community organization staff to distribute information, to encourage residents to participate in special meetings, workshops, or programs, and to obtain information on community concerns.

5. Assists staff to implement recreational or arts and crafts program. Tasks may include arranging materials or equipment for client's use; helping individuals learn recreational or craft skills; or keeping records on supplies and attendance.

6. Secures parental permission for children to participate in special programs or trips.

7. Attends staff meetings to discuss program changes and reviews client's progress or difficulties. The aide may be asked to present verbal reports on progress made by the client or to discuss recent community crises.

8. Makes home visits to establish communication with a new family and determine if they need assistance with housing, food and clothing.

9. Accompanies residents to locate housing. May include phoning rental offices or reviewing newspaper ads.

Core Curriculum Outline

Communications In Human Services I

1 Semester

3 Hours

I. Programmed Listening (Xerox, Corporation)
   A. Effective listening
      1. Editing mentally as the speaker progresses
      2. Organizing by main points and supporting reasons
      3. Remembering the use of key words
      4. Summarizing and Paraphrasing effectively
      5. Breaking through distractions
      6. Note taking
   B. Advanced effective listening
      1. Review
      2. Expanding listening skills
      3. Listening to groups
      4. Note taking and group discussions

II. Forms and Proceedures
   A. Interview
   B. Employment
   C. Tax
   D. Welfare
      1. Medicare
      2. Social Security
      3. Public Aid
      4. Other
   E. Medical
   F. Credit
   G. Educational
   H. Referral

III. Report Writing
   A. Purpose
   B. Descriptive reports
      1. Case Histories
      2. Progress reports
   C. How to condense material
      1. Summaries
      2. Memos
   D. Evaluations

IV. Media
   A. Purposes
   B. Stencil Making
   C. Machines (Copy)
      1. Mimeo
      2. Photo copy
   D. Machines (educational and entertainment)
      1. Tape recorder
      2. Film projectors
         a. Slide
         b. Movie
      3. Phonographs

E. Narrative Writing
   1. Letters
   2. Flyers
   3. News releases
   4. Argumentative material

V. Simple Mathematics
   A. Purposes
   B. Decimal fractions
   C. Percentage
   D. Simple records (Bk.pg.)
   E. Interest and Bank statements
   F. Verbal problems
   G. Simple Statistics

Core Curriculum Outline

Communications In Human Services II

1 Semester

3 Hours

I. Theory
   A. Major purposes
      1. Convey information
      2. Convey feelings
      3. Establishment of rapport

   B. Background
      1. Self-awareness
      2. Consciousness

   C. Process
      1. Verbal
         a. Oral (tone, accent, pauses, mood, words)
         b. Written
      2. Unstructured nonverbal
         a. Facial expression
         b. Posture
         c. Attitude
         d. Appearance
         e. Touch
         f. Pictographic
         g. Timing
      3. Structured nonverbal communication
         a. Audiovisual (eg. film, music, color)
         b. Formal (eg. form, shape, container, package)

   D. Problems
      1. Ego defense mechanisms
      2. Conflict resolution
      3. Other

II. Applications
   A. Purpose and areas of use
      1. Use of relationships
      2. Extraction of information
      3. Indentification and resolution of problems
         a. Individual
         b. Group
         c. Community

   B. Methods
      1. Discussion
         a. Interviewing
         b. Formal discussion
            1. Instructing
            2. Meetings

c. Informal discussion
2. Demonstration
3. Contact
   a. Physical
   b. Other
4. Termination of communication

APPENDIX E: CORE CURRICULUM SCHEDULE OF COURSES

Table 1A Two Year Course Outline for the A.A. Degree

1st Semester	2nd Semester
Orientation to Social Service 3 Hours	Human Biology I (Principles of Health) 3 Hours
Communication In Social Services I 3 Hours	Communication In Social Services II 3 Hours
American Ethnic Groups 3 Hours	Social Problems 3 Hours
Techniques of Organization and Decision Making 2 Hours	Community Resources 2 Hours
Psychology 101 (Human Growth and Development) 3 Hours	Psychology 102 (Human Growth and Development) 3 Hours
Physical Education I 1 Hour	Physical Education II (Recreation games) 1 Hour

Table 1A represents what the research project would consider the ideal program in terms of the arrangement of courses and time freed for practicum and specialty training. It makes no accommodation to existing systems through inclusion of courses in English and Sociology, which are subjects already adequately covered in the courses delineated, although not with customary titles or traditional arrangement of subject matter.

Table 1A Two Year Course Outline for the A.A. Degree

3rd Semester	4th Semester
Human Biology II (Health Care) 3 Hours	Elective in Specialty 3 Hours
Abnormal Psychology 3 Hours	Elective in Specialty 3 Hours
Group Process 3 Hours	Elective in Specialty 3 Hours
Creative Activities I 3 Hours	Creative Activities II 3 Hours
Practicum I 3 Hours	Practicum II 3 Hours

Table 1A represents what the research project would consider the ideal program in terms of the arrangement of courses and time freed for practicum and specialty training. It makes no accommodation to existing systems through inclusion of courses in English and Sociology which are subjects already adequately covered in the courses delineated, although not with customary titles or traditional arrangement of subject matter.

Table 1B Two Year Course Outline for the A.A. Degree

1st Semester	2nd Semester
Orientation to Social Services 3 Hours	Human Biology (Principles of Health) 3 Hours
Communication in Social Services I 3 Hours	Communication in Social Services II 3 Hours
Sociology 101 3 Hours	Sociology 102 3 Hours
Techniques of Organization and Decision Making 2 Hours	Community Resources 2 Hours
English 101 3 Hours	English 102 3 Hours
Physical Education I 1 Hour	Physical Education II (Recreational games) 1 Hour

Represents an accomodation to existing conditions in college with 30 Hours Liberal Arts requirement. The curriculum represents a total of 33 Hours due to the necessity of a six hour practicum rather than a three hour practicum. Nevertheless, no program need exceed 30 Hours due to the opportunity for specialized course deletion or substitution.

Table 1B Two Year Course Outline for the A.A. Degree

3rd Semester	4th Semester
Human Biology (Health Care) 3 Hours	Psychology 102 (Human Growth and Development II) 3 Hours
Psychology 101 (Human Growth and Development I) 3 Hours	Social Problems 3 Hours
Creative Activities I 3 Hours	Creative Activities II 3 Hours
Abnormal Psychology 3 Hours	Group Process 3 Hours
American Ethnic Groups 3 Hours	Practicum 6 Hours

Represents an accomodation to existing conditions in college with 30 Hours Liberal Arts requirement. The curriculum represents a total of 33 Hours due to the necessity of a six hour rather than a three hour practicum. Nevertheless, no program need exceed 30 hours due to the opportunity for specialized course deletion or substitution.